Atomic and Nuclear Physics. D. L. LIVESEY. Pp. 525, Blaisdell Publ. Co., 1966, Price: $8.50.

For many years this department has been offering a one year course in modern physics which follows a historic approach in introducing the students to quantum theory and covers basic topics in atomic, molecular, solid-state, nuclear, and particle physics. Both physics majors and students from other departments take this course, which has only introductory physics as a prerequisite.

The instructor teaching this course has been having difficulties in finding a suitable text. The available texts were either intended for one-semester courses, or were too advanced, or omitted a large fraction of the material which it is designed to cover.

Livesey's new book fills the need for a text for our traditional course. It covers all the topics except molecular physics, and its level is generally appropriate, although some sections, such as those on Pauli matrices and relativistic quantum mechanics, are too difficult for our students.

The variety of topics covered in a modern physics course frequently presents problems to the authors who cannot be experts in all the fields. When I examine a text for possible adoption, I usually get the impression that the author is competent in all areas except in my own specialty. Livesey's book, however, is authoritative in my own field of interest.

At the end of each chapter, there is an excellent collection of problems of varying degrees of difficulty. The instructor can even obtain a booklet in which the solutions are worked out. Almost all the solutions to the problems that I have assigned turned out to be correct. In the text itself, the errors and misprints are not numerous enough to be confusing.

Although so far I have used the book only for part of a semester, I am sufficiently pleased with it that I would expect to adopt again.

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Physical Science. WILLIAM A. RENSE. Pp. 408, Ginn–Blaisdell, Waltham, Mass., 1966. Price: $8.50.

Recently there has been a veritable flood of textbooks on physical science at the college freshman level. This book is probably typical of most. Although it is strong in some respects, notably in the application of physical principles to particular natural phenomena, it is particularly weak in the development of the principles themselves. For example, Newton's laws of motion are stated and explained in their entirety on page 2. For students with no prior exposure to physical science, the cursory treatment given here seems too inadequate to transmit even a superficial understanding of the laws. Other topics in mechanics—such as work, energy, angular momentum, and the conservation laws—are discussed in a similar manner. This superficial treatment prevents further investigation of some phenomena amenable to simple mathematical development: For example, on page 28 the Coriolis force is introduced and then dropped, because the necessary mechanical preliminaries have not been adequately explained.

The general orientation of the book is toward explanation of various physical phenomena of current interest, and the historical development of physical science is largely avoided. It is difficult to argue against the former aim, but one wonders if the exclusion of the history is wise. It does not seem possible to this reviewer to understand fully the history of modern western civilization without some acquaintance with the history of science. Certainly the tendency should be toward the *unification* rather than the *compartmentalization* of knowledge.

Some sections that are good to excellent are those on geology, geometrical and physical optics, atmospheric science, solar physics, and quantum electronics. It is, in fact, doubtful if satisfactory elementary treatments of quantum electronics and atmospheric and solar physics are otherwise available elsewhere in either text or supplement form. In addition, there is a well-chosen set of questions and problems at the end of each chapter; a spot check disclosed no errors in the answers given at the end of the book. Nevertheless, anyone considering adoption of this book as a text is warned that it should be complemented by another textbook on at least the basic principles.

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The Scientific Papers of James Clerk Maxwell. W. D. NIVEN, M. A., F. R. S., Ed. 2 vols. bound in one. Pp. xl+1413, Dover Publications, Inc., New York, 1965. Price: $12.50 (clothbound).

Originally published in 1890 by Cambridge University Press, this Dover edition is both an unabridged and unaltered reproduction, conveniently bound in one volume. Here are to be found the magnificent treatments of the dynamical theory of gases, the electromagnetic theory of light, Faraday's lines of force, color perception and the evaluation of color mixtures in terms of primary colors, the stability of motion of Saturn's rings, and geometrical optics. Included also are several articles prepared by Maxwell for the *Encyclopedia Brittanica* and popular lectures on the lives of Faraday and von Helmholtz. To those of us of today, his remarks on the talking device known as the *telephone* are of somewhat more than passing interest. Admitting the sound scientific basis of this instrument on Faraday's electromagnetic induction principles, Maxwell little foresaw that his own set of equations on light, electricity, and magnetism would one day flower into *radio*, *radar*, and communications with artificial satellites as far out, at least, as Mars.

This complete edition of the works of the brilliant Scottish physicist and mathematician should be in the library of every serious student of physics for both reference and inspiration.

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